

IN THE CLAIMS

Please amend the claims to read as follows:

Listing of Claims

- 1-3. (Canceled).
4. (Currently Amended) ~~[Claim 4]~~ A base station apparatus having the decoding apparatus according to claim 7 ~~4~~.
5. (Currently Amended) ~~[Claim 5]~~ A mobile station apparatus having the decoding apparatus according to claim 7 ~~4~~.
6. (Canceled).
7. (New) A decoding apparatus for performing decoding computations on a window of a predetermined size in parallel in a plurality of processing systems, using a sliding window method and a Max-LOG-MAP algorithm, comprising:

a forward probability computing section for sequentially computing in parallel in each of the processing systems a forward probability corresponding to a current time point indexed k from the forward probability corresponding to an earlier time point indexed k-n, wherein n is the number of the plurality of processing systems, at an index interval in the window corresponding

to the number n of the plurality of processing systems, wherein the current time point index in each of the processing systems is shifted sequentially by one;

a backward probability computing section for sequentially computing in parallel in each of the processing systems a backward probability corresponding to a current time point indexed k from the backward probability corresponding to a later time point indexed $k+n$ and at an index interval in the window corresponding to the number n of the plurality of processing systems, wherein the current time point index in each of the processing systems is shifted sequentially by one; and

a likelihood computing section for computing likelihood information in parallel in each of the processing systems using the forward probability and the backward probability.

8. (New) The decoding apparatus according to claim 7, wherein the backward probability computing section computes the backward probability corresponding to the current time point using data at a later time point than the window targeted for processing at the current time point as training data.

9. (New) The decoding apparatus according to claim 8, wherein the training data used in the backward probability computing section is common in the plurality of processing systems.